HAMMERHEAD™



OWNERS AND SERVICE MANUAL

INNOVATIVE CONCEPTS IN ENTERTAINMENT INC.

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1-6-2011

INTRODUCTION

GAME FEATURES

Thank you for purchasing the new Hammerhead™ game from I.C.E. This new “WACKY” game utilizes all the proven technology of it’s predecessor Smack-n-Alien. ICE has taken out the cost but not the quality, giving the customer a fresh look with full reliability.

Game cabinetry is stylish, yet bright. The game has been designed to be either a back-to-back centerpiece or a wall unit that will enhance the look of any location. Thick 16 gauge metal panels and marine grade water resistant plywood make the game extremely durable. The boat bow is made of a special high impact styrene that is easy to maintain.
The distortion printed marquee is made of .187 PETG. This is back printed, which will prevent the customer from damaging the printing. The PETG is more durable than acrylic and therefore will withstand impact better.
Electronics and sounds are the state of the art in digital technology. Robust design ensures a long trouble free life for your game. The game is very flexible with its programming options to allow it to be tailored to most locations easily.

GAME PLAY

The object of the game is to hit as many sharks as possible in the time allowed. (Note: the player must try to hit the sharks that are in the up position to score points)
The player does not get penalized for missing a shark.
The high score for the day will be displayed for all new players to try and match.

(NOTE: There is a bonus shark, the shark that pops up before game play starts. If a player hits that on he will be awarded one extra point.)

INSTALLATION

BEFORE YOU BEGIN

WARNING: WHEN INSTALLING THIS GAME, A GROUNDED A.C. RECEPTACLE MUST BE USED. FAILURE TO DO SO COULD RESULT IN INJURY TO YOURSELF OR OTHERS. FAILURE TO USE A GROUNDED RECEPTACLE COULD ALSO CAUSE IMPROPER GAME OPERATION, OR DAMAGE TO THE ELECTRONICS

DO NOT DEFEAT OR REMOVE THE GROUNDING PRONG ON THE POWER CORD FOR THE SAME REASON AS GIVEN ABOVE. USING AN IMPROPERLY GROUNDED GAME COULD VOID YOUR WARRANTY.

HAVE A QUALIFIED ELECTRICIAN CHECK YOU'RE A.C. RECEPTACLE TO BE SURE THE GROUND IS FUNCTIONING PROPERLY.

TOOLS NEEDED

The game normally comes fully assembled and ready for use.

If however, you need to disassemble or reassemble the marquee to the game for any reason, all that is needed is a 5/32 security Allen wrench.

INSTALLATION

The game comes ready to play with just a few simple things to keep in mind.

1. When installing the game, be sure you use a grounded A.C. outlet. If necessary, have it checked to be sure the ground is good.

THIS GAME IS DESIGNED TO DISSIPATE STATIC ELECTRICITY THROUGH THE GROUNDING PLANE OF THE GAME. IF THE A.C. GROUND DOES NOT WORK, THE GAME COULD DISCHARGE STATIC ELECTRICITY THROUGH THE GAME CIRCUITRY, WHICH COULD CAUSE DAMAGE.

2. Make sure the game is level after installation. It is necessary to make sure the game is level so the game will work properly.

3. Place the game into its final location and use the adjusting feet to level the game.

CAUTION: CHECK THAT THE A.C. VOLTAGE RATING ON THE BACK OF THE GAME MATCHES THE A.C. VOLTAGE OF YOUR LOCATION.

THE POWER SUPPLY IS NOT VOLTAGE ADJUSTABLE.

TO OPERATE THE GAME AT VOLTAGES OTHER THAN THOSE IT WAS DESIGNED FOR, PLEASE CONTACT OUR SERVICE DEPARTMENT FOR VOLTAGE CONVERSION INFORMATION.

Plug the game into the A.C. outlet and turn on power to the game. The switch for the game is located on a power module on the outside rear of the game.

It is now time to program your game……..

PROGRAMMING

INTRODUCTION

The Hammerhead™ game is extremely flexible from a programming standpoint. This allows the customer to “fine tune” the game to his or her exact needs.

This section will describe in detail each of the programming options and how they work.

PLEASE READ THIS SECTION THOROUGHLY BEFORE CALLING OUR SERVICE DEPARTMENT. MOST QUESTIONS REGARDING SET-UP AND OPERATION WILL BE FULLY EXPLAINED HERE.

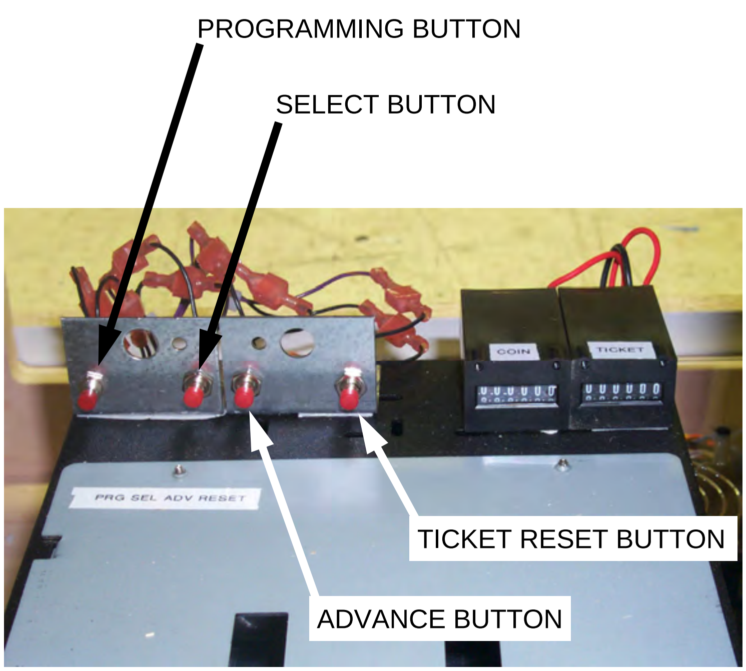
HOW TO USE THE PROGRAMMING OPTIONS

PROGRAMMING BUTTON – Use this button to enter and exit the programming mode. Press this button once to enter the mode, and once again to exit the mode.

SELECT BUTTON – Use this button to scroll through and “step” through the various options.

ADVANCE BUTTON – Use this button to “change” the value of a particular option.

TICKET RESET BUTTON - Use this button to “reset” ticket counter.



PROGRAMMING

OPTION	DEFAULT	MIN / MAX		DEFINITION
O	7	00	10	Volume adjustment
1	2	01	09	coins per credit switch 1
2	1	00	09	# of coin 1's per credit switch 2
3	20	10	99	number of seconds per game
4	2	00	06	difficulty (lower = easier)
5	2	00	09	tickets just for playing
6	5	01	10	hits per tickets
7	25	00	99	ticket cap per game
8	5	00	99	minutes between attract mode
9	3	01	03	attract mode type
10	00	00	01	factory reset

NOTE: After the factory reset has been selected, the programming button must be pressed twice to exit.

MAINTENANCE

GENERAL MAINTENANCE

This game has been designed to be as trouble and maintenance free as possible.

With this in mind the only basics are to keep the game clean. Below are the main areas to take care of with specific directions.

MARQUEE

The MARQUEE should be cleaned with a soapy water solution if covered with water-based dirt such as food products. After cleaning with soapy water, polish with a commercial plastic polish or a spray furniture polish. These have lubricating oils that condition the plastic and keep it shiny and clear looking. Never use regular glass cleaners as the ammonia in them actually damages the plastic and dulls it.

Any deep scratches can be reduced or eliminated with a scratch removing polish and buffing wheel.

CABINET

The cabinet plastic and decals can be cleaned with soapy water or spray furniture polish. DO NOT use any alcohol or petroleum based cleaners as they could damage the plastic or printed parts.

COIN MECHANISMS

The coin mechanisms should be cleaned periodically, as they will accumulate dirt, which will cause the coins to stick.

Remove the coin mech and clean them in a dish detergent solution and a stiff brush. Dry thoroughly and reinstall.

TICKET DISPENSERS

The biggest problem ticket dispensers have is ticket dust blocking the optical detectors. It is a good idea to occasionally use compressed air to remove the dust from the dispensers.

SHARK HEAD

The sharks should be cleaned with a soapy water solution. Be sure to wring the sponge out before cleaning. Excess water may drip onto coil bed assembly and cause permanent damage.

LUBRICATION

We do not recommend the use of any lubrication anywhere on the game.

The only moving parts on the game are the sharks. If you notice any sticking or binding of the sharks check the following.

- Dirt on the solenoid shafts – Remove the solenoid shafts, clean with isopropyl alcohol. Finish wiping clean with a good grade of spray polish only.

- Wear – If excessive solenoid body wear is noted, replace the solenoid coil.

QUICK TROUBLESHOOTING

GAME WILL NOT TAKE OR ADD MONEY CORRECTLY

- Micro switch not working or returning properly. Check and repair or replace as necessary.
- Bad Harnessing or connector. Check w/ohm meter and repair as necessary.
- Game programming set incorrectly. Check programming option and re-program if necessary.
- Bad Main P.C. Board. Check and repair or replace as necessary.

SHARKS WILL NOT POP UP DURING GAME PLAY

- Opto Sensor is not working properly. Test and replace as necessary.
- Reflective foil is not properly in place. Reapply foil correctly.
- Bad harnessing or connector. Check w/ohm meter and repair as necessary.
- Bad Main P.C. Board. Check and repair or replace as necessary.

GAME HAS NO SOUND

- Bad speaker. Check w/ohm meter for 4 or 8-ohm load. If not within this range, replace.
- Volume level set incorrectly. Check volume level in programming, and adjust if necessary.
- Bad Harnessing or connector. Check w/ohm meter and repair as necessary.
- Bad Main P.C. Board. Check and repair or replace as necessary

TICKET DISPENSER DOES NOT WORK OR WORKS IMPROPERLY

- Bad ticket dispenser. Repair or replace as necessary.
- Bad harnessing or connector. Check w/ohm meter and repair as necessary.
- Bad Main P.C. Board. Check and repair or replace as necessary.
- Game out of tickets. Add tickets
- Optical sensor on ticket dispenser dirty. Remove paper fuzz and debris with a soft brush.

NO FLORESCENT LIGHTING

- Bulb burned out. Replace bulb.
- Electronic ballast bad. Replace ballast.
- Harness bad or harness unplugged. Check w/ohm meter and plug in, repair or replace as necessary.
- No A.C. power to the game or Main fuse bad. Check fuse and A.C. power.

TICKETS OR HIGH SCORE DISPLAY Don't WORK PROPERLY

- Bad Display P.C. Board. Repair or replace Display board
- Bad Main P.C. Board. Repair or replace Main board.
- Bad display harnessing. Repair as necessary.

CAN'T ENTER OR EXIT PROGRAMMING OR OTHER ADJUSTMENT MODES

- Bad programming or adjustment buttons. Replace buttons. Check harnessing.
- Bad Main P.C. Board. Repair or replace Main board.

GAME REPAIR

WARNING: ALWAYS REMOVE POWER TO THE GAME BEFORE ATTEMPTING ANY SERVICE, UNLESS NEEDED FOR SPECIFIC TESTING.
FAILURE TO OBSERVE THIS PRECAUTION COULD RESULT IN SERIOUS INJURY TO YOURSELF OR OTHERS.

OPERATIONAL BACKGROUND

The HAMMERHEAD™ game has been manufactured with modular design in mind. Almost everything in the game can be EASILY removed for servicing. This makes it much easier for the repairman as he / she can work in a quieter less distracting environment away from the Game Room floor. The game relies on 1 coil bed assembly which can be remove from the game very easily.

Coin and low ticket sensing are done with conventional micro switches. In all areas of critical importance, optical sensors were developed specifically, and optimized for their particular application.

All P.C. Boards are made of premium quality board material and use time proven components to assure you of the most reliable designs possible.

We have put forth our best efforts and tested this game extensively to assure the best possible performance under the widest variety of operating conditions. We are ALWAYS however interested in our customers input for product improvement. If you have any questions or comments please feel free to contact our service department.

I.C.E. SERVICE DEPARTMENT
716-759-0360
NORMAL BUSINESS HOURS ARE:
MONDAY – FRIDAY, 9:00 AM TO 6:00 PM EST

TROUBLESHOOTING PHILOSOPHY

To find problems with the game, always first check what should be obvious. See that the game is plugged in, and that all of the fuses on the game are good. This includes the fuse that is located INSIDE the power module.

Next, check to see that all of the connectors are firmly seated and that none of the wires have been pulled out of them.

When trying to find out if specific components are bad or not. This will help you to know if you have a problem with a specific component, or maybe a problem with either the wiring or the Main P.C. Board.

Use extreme caution when using probes or voltmeters if the game is powered up. If doing continuity checks, it is important to disconnect the harnessing at both ends, as attached they may yield erroneous results.

If a P.C. Board is suspected as the cause of a problem, check to see that all of the components on the board are firmly attached. Pay special attention to any socketed devices.

If light bulbs are suspected, swap them with a bulb that is known to work to narrow the problem down to either a bulb or P.C. Board.

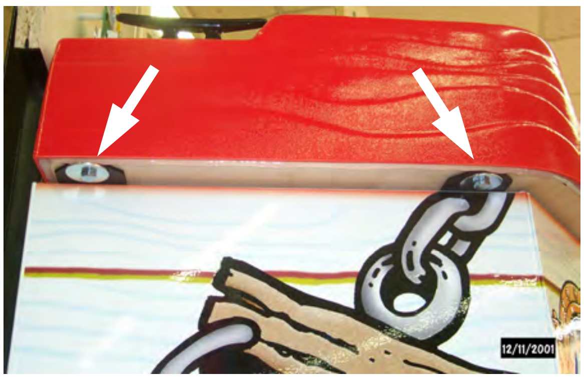
GAME REPAIR

REPLACEMENT & REPAIR

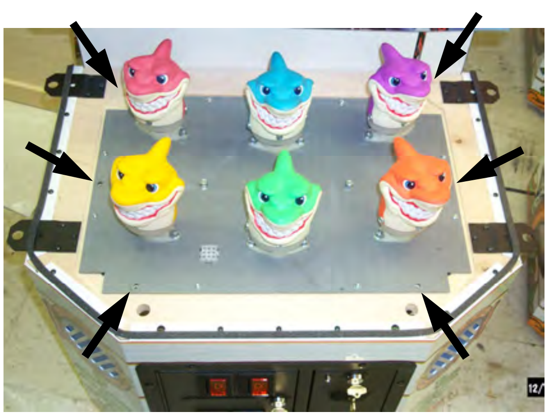
COIL BED SERVICING

To remove the coil bed:

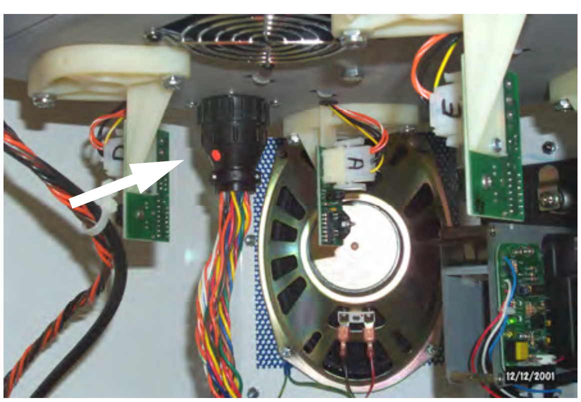
1. Remove the 4 bolts that hold the boat bow on to the cabinet. The bolts are located on the underside of the playfield, on the left & right sides of the game.



2. Remove the 6 bolts holding the coil bed in position as shown in the photo below.



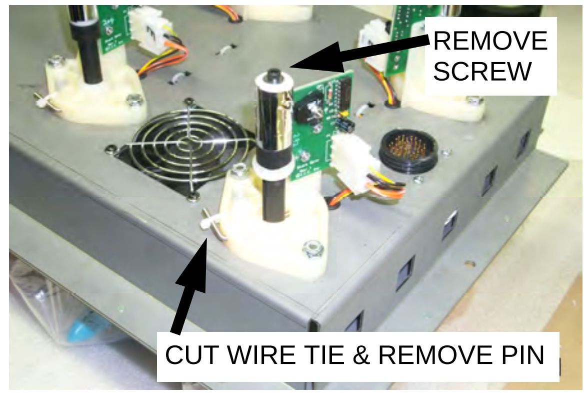
3. Unplug the multi pin connector by twisting off.



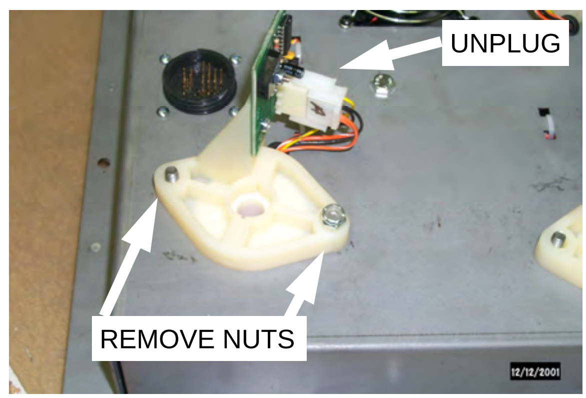
COIL BED PARTS REPLACEMENT

Service the coil bed as follows:

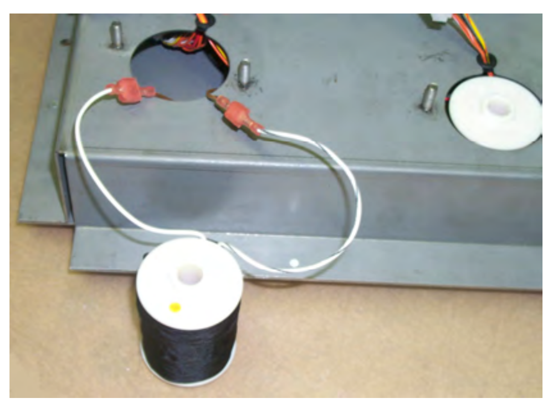
1. Remove all the shark heads from the coil bed. To remove sharks, turn the coil bed over so that the coil bed is resting on the shark heads. Remove the Allen head screw from the shaft. Cut the wire tie and remove the locking pin. Pull the shark heads through the coil bed.



2. Unplug the Sensor PCB Assembly. Remove the two Nylok nuts holding the coil cap.



4. Disconnect the wires to the coil & remove.



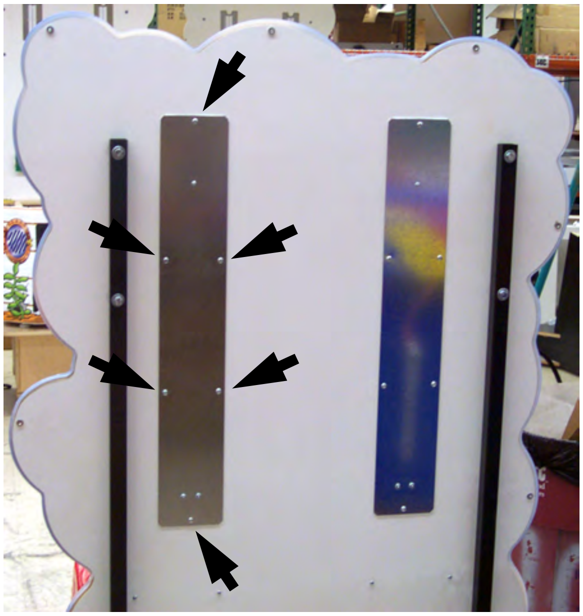
5. Assemble in reverse order.

GAME REPAIR

MARQUEE BULB / DISPLAY BOARD SERVICE

To replace a light bulb:

1. Remove the square drive screws on the rear of the marquee, that attach the lamp mounting panels. Start with the side that looks like the light is out.

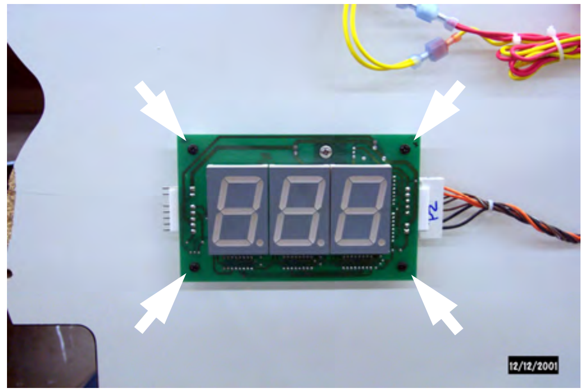


Display Board follow the directions below:

1. CAUTION: Be sure that the power has been disconnected before attempting to unplug the Display Boards.
2. Remove the security Allen bolts around the perimeter of the marquee.



3. Using a Phillips screwdriver, remove the four screws that hold the board in place.



4. Repeat the previous steps to remove the second display.

IF YOU HAVE ANY QUESTIONS OR COMMENTS, PLEASE CONTACT OUR SERVICE DEPARTMENT AT:

716-759-0360
MON. THRU FRI. 8AM-5PM EST

PARTS LISTING

Parts denoted with * indicate available as part of a specially discounted spares kit.

MECHANICAL PARTS

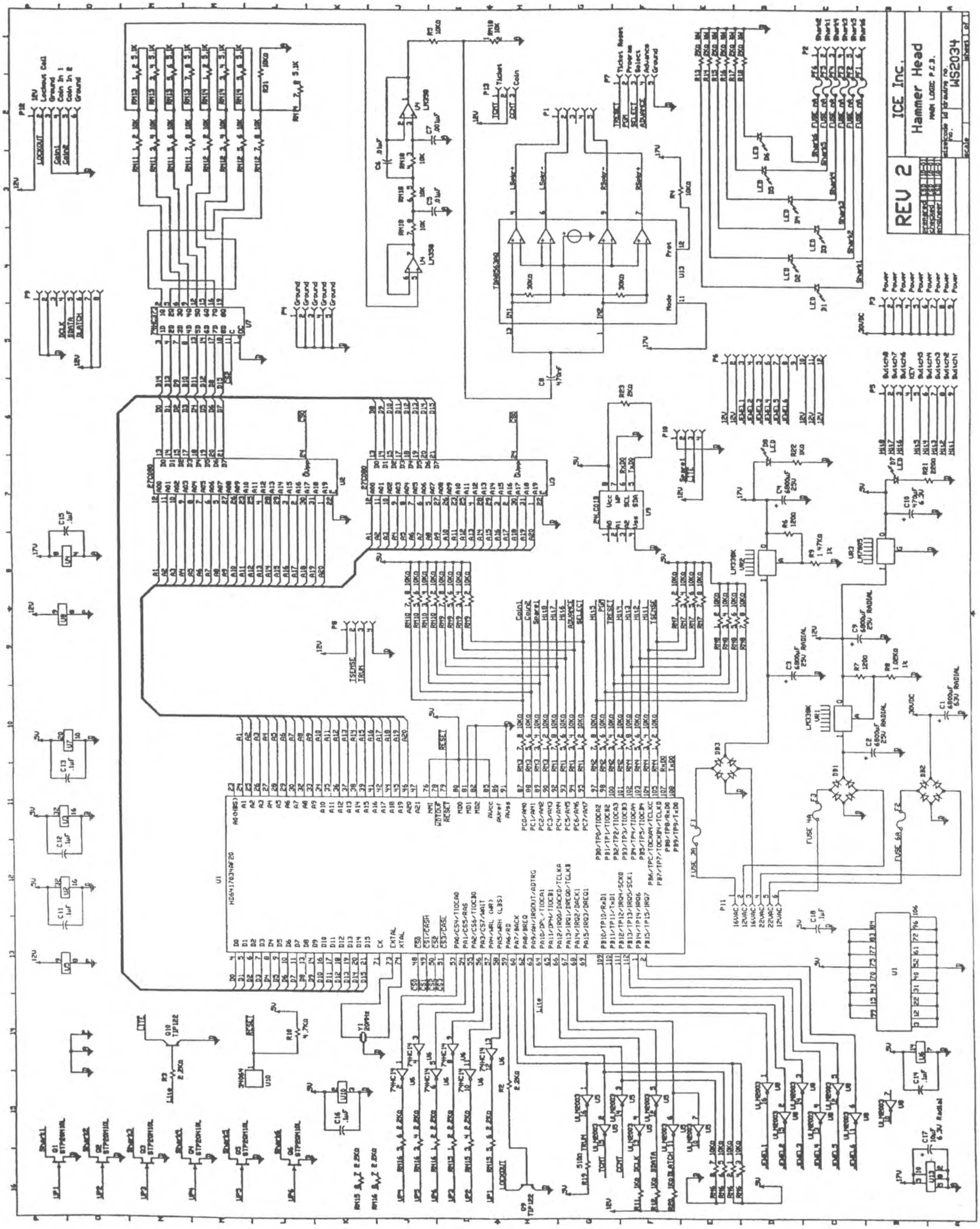
E00211	Low Ticket Micro Switch
BW250X	PLL Bulb Socket Assembly
FP1004	Leg Leveler Mounting Bracket
HR1019	Leveler Foot
Ws1022	Ticket Bin Entropy Style
1026	Bracket, Low Ticket Switch Mounting
AR2007	Speaker, 6” x 9”
BW2017	PLL Bulb Retaining Clip
BW2018	PLL Bulb Support
2027	Fan, DC 12 Volt
5101X	Mech Holder Assembly
BW8284X	Workhorse 6 Ballast, (WH6-120-L)
8312*	Bulb, PL-L 40W/41/RS/IS Fluorescent
HH5005	Ticket Dispenser
WA4010	Mallet
WS4011B	Shark head only Blue
WS2011BX	Shark head w/base Blue
WS4011G	Shark head only Green
WS2011GX	Shark head w/base Green
WS4011O	Shark head only Orange
WS2011OX	Shark head w/base Orange
WS4011PU	Shark head only Purple
WS2011PUX	Shark head w/base Purple
WS4011PI	Shark head only Pink
WS2011PIX	Shark head w/base Pink
WS4011Y	Shark head only Yellow
WS2011Y	Shark head w/base Yellow
175	Immonex Mech.
2289	Reset Button
CG2027	Power Cord 9’
2364	Coil Bed Fan
WA1054	Limiting Pin
WS7027X	Marquee Vacuum Form
WS3004	Boat Cleat
WS8444X	Jewel Light Assembly
WS2011X	Base Assembly
WS9001	Service Manual
WS2011SX	Full assembly of shark heads w/base Set of 6
WS3003X	Playfield assembly
WA3006	Shaft Cap
WSsharkkit	Shark + Mallet kit
WA3002	Spring cap
WA3003X	Coil Cap

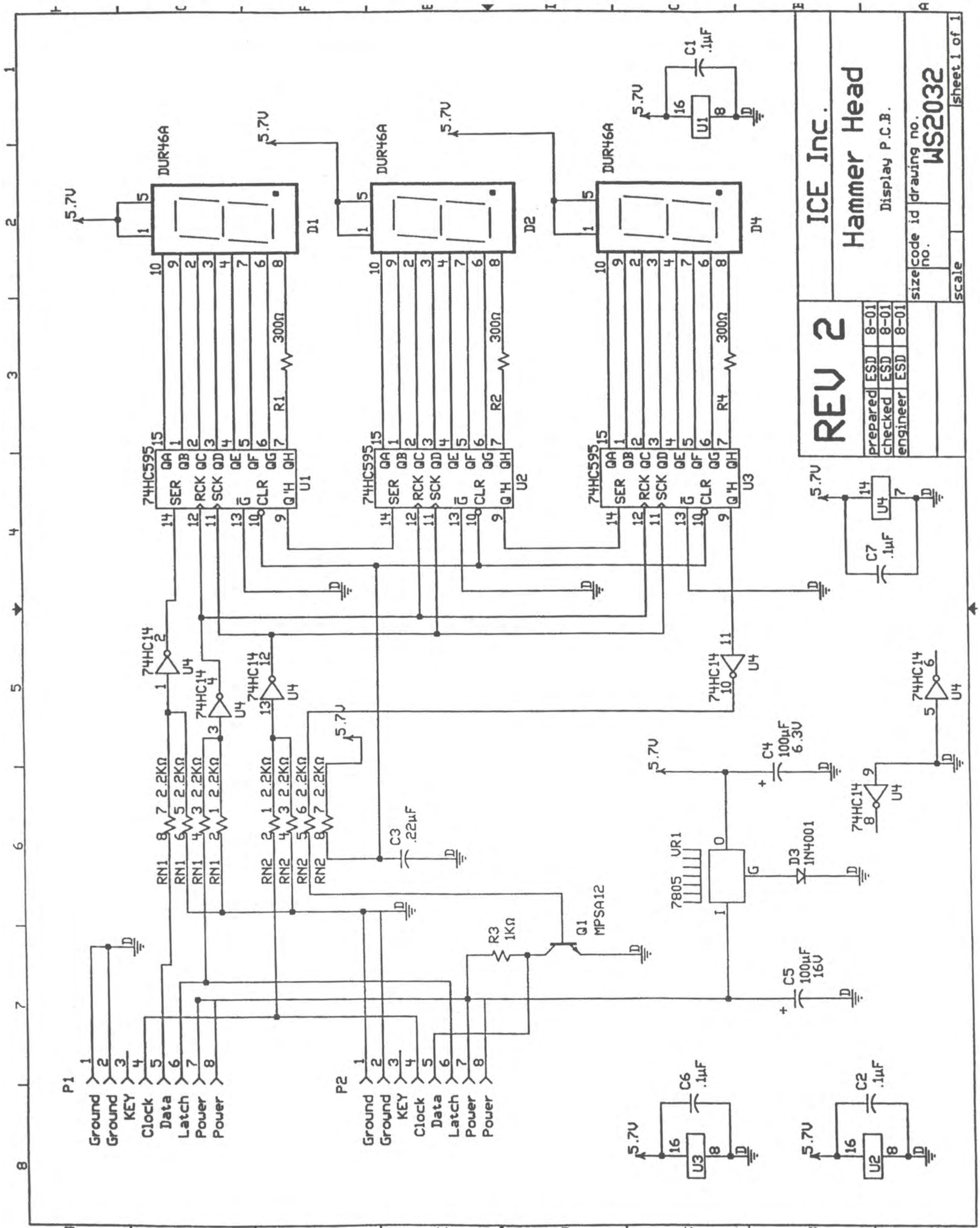
ELECTRONIC / ELECTRICAL

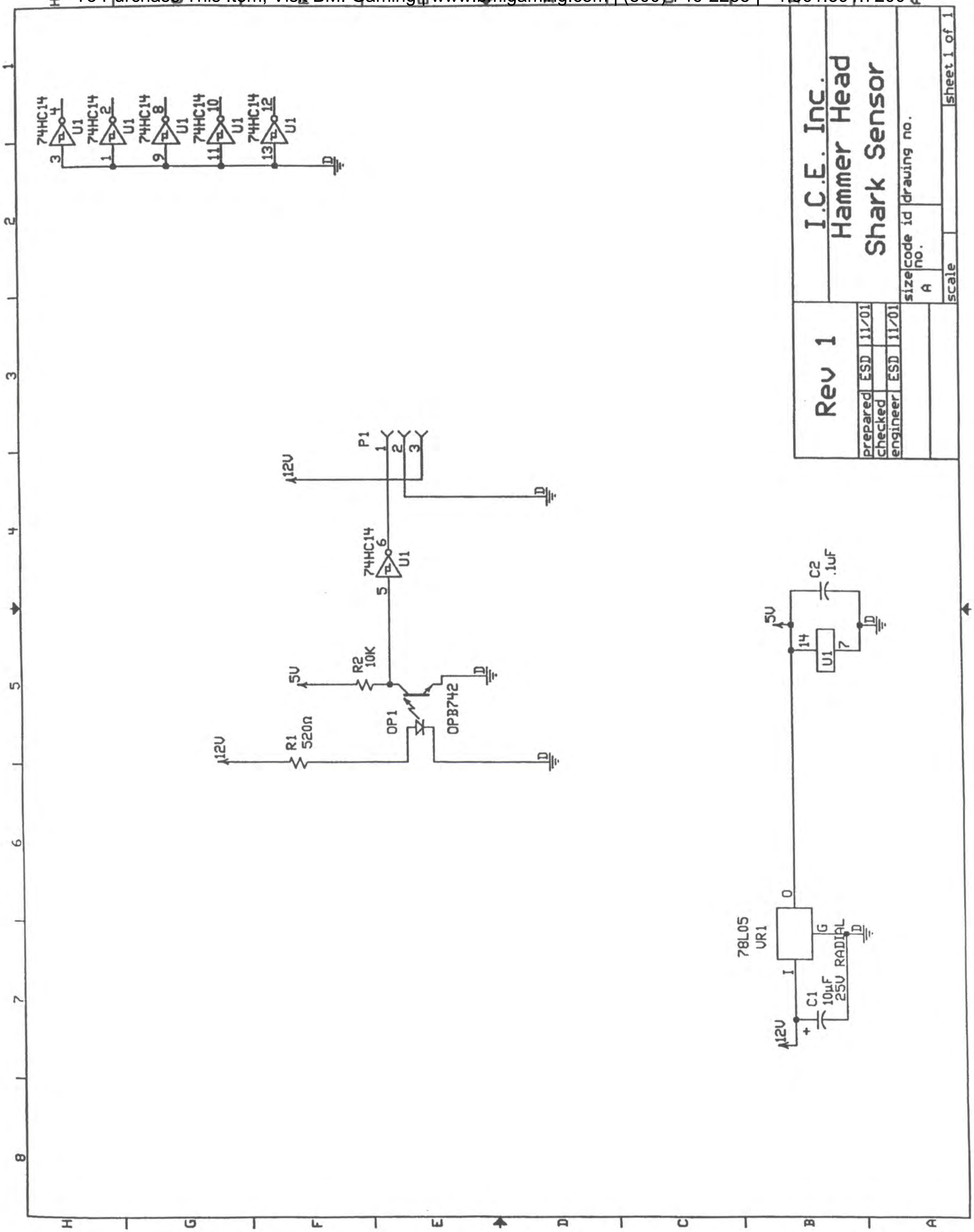
WS2034X	Main PCB
WS2032X	Display Boards
2295	Fuse, MDQ6 (6 Amp Slo Blo)
2315	Fuse, MDQ3 (3 Amp Slo Blow
E20429	Flashing LED (Low Ticket)
MZ8284X	Ballast Workhorse 6
WA3001X	Coil
WS2002X	Transformer
WS2007X	Power mod
WS2039X	Shark opto
WSlightkit	Light + sensor kit
WSsparekit	Spare parts kit

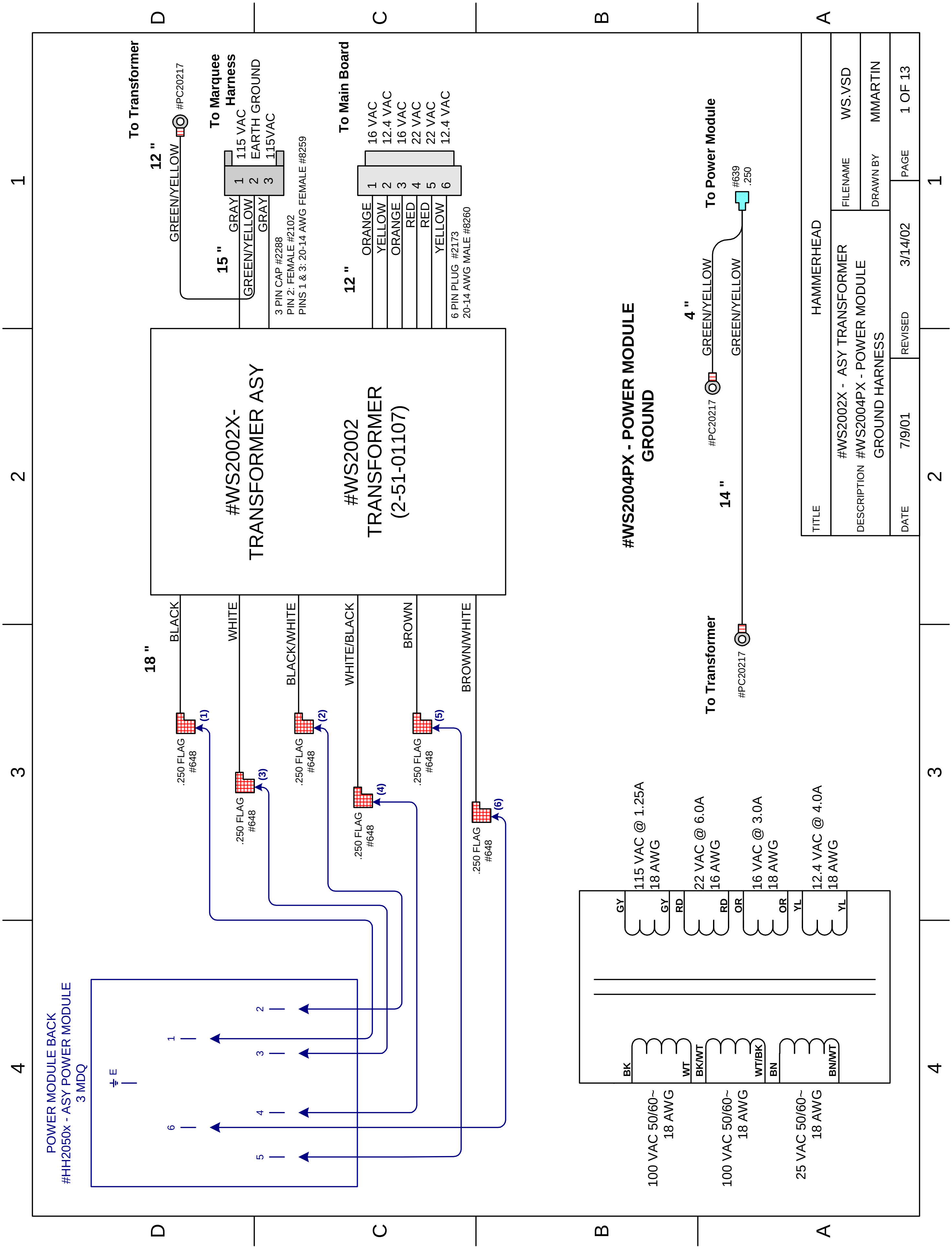
DECALS AND GRAPHICS

WS7003	BOAT DECK DECAL
WS7005	FRONT DECAL
WS7112	RIGHT SIDE DECAL
WS7110	LEFT SIDE DECAL
WS7027	MARQUEE (BACK DROP)
WS7006	ICE LOGO

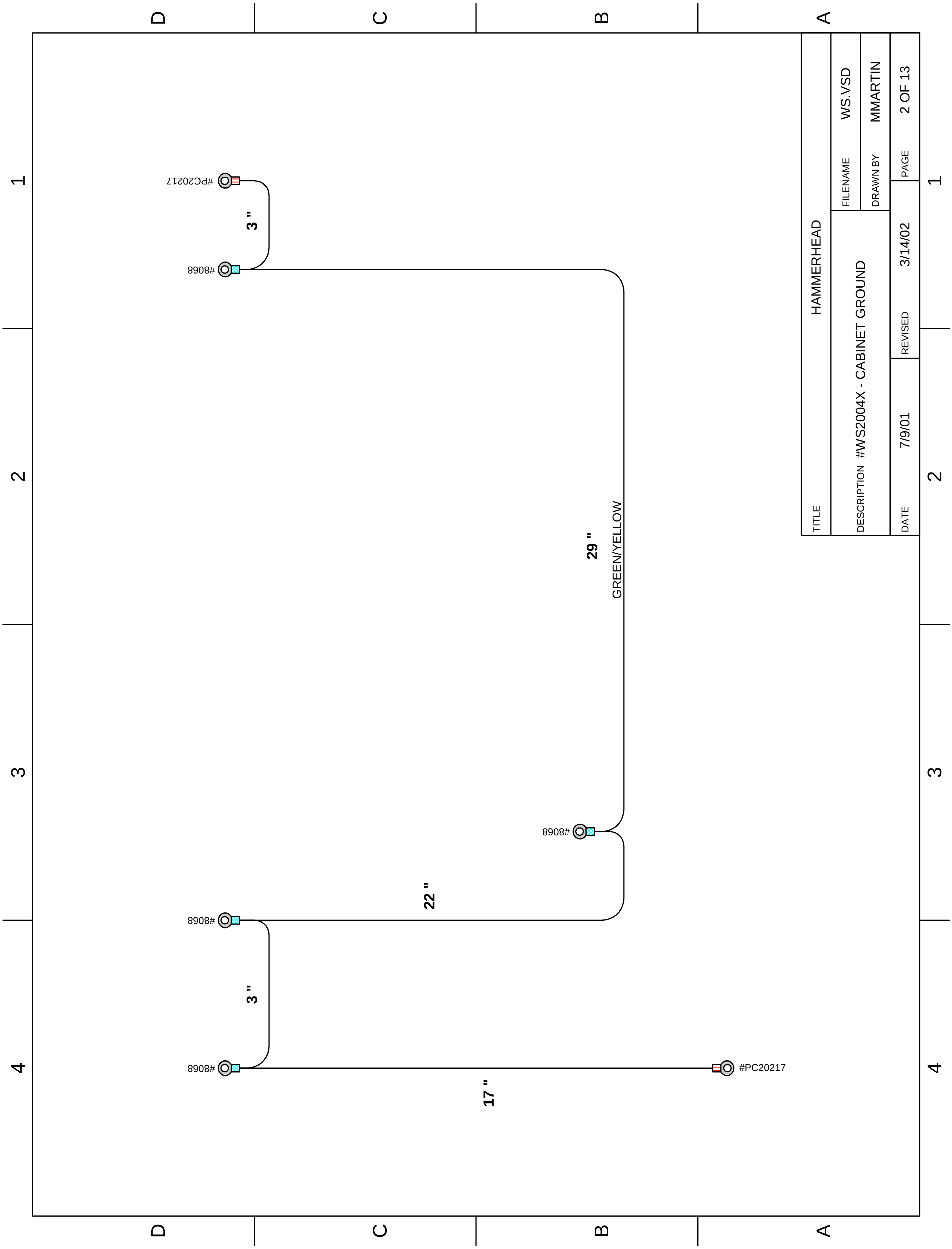

ICE Inc.
Hammer Head
MAIN LOGIC P.C.B.
WS2034
REV 2


ICE Inc.
Hammer Head
Display P.C.B.
WS2032
sheet 1 of 1
REV 2
prepared ESD 8-01
checked ESD 8-01
engineer ESD 8-01
74HC595
DUR46A
74HC14
7805
MPSA12
1N4001
Ground
Ground
KEY
Clock
Data
Latch
Power
Power

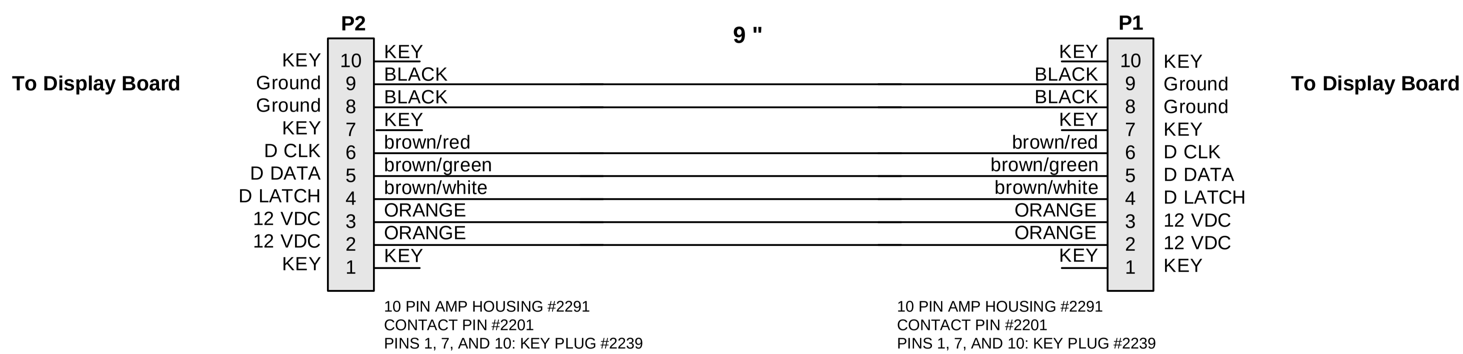

I.C.E. Inc.
Hammer Head
Shark Sensor
Rev 1
prepared ESD 11/01
checked
engineer ESD 11/01
size A
code id no.
drawing no.
scale
sheet 1 of 1
74HC14
U1
P1
12V
5V
R2 10K
R1 520Ω
OP1
OPB742
C2 .1uF
C1 10uF 25V RADIAL
78L05
UR1
D



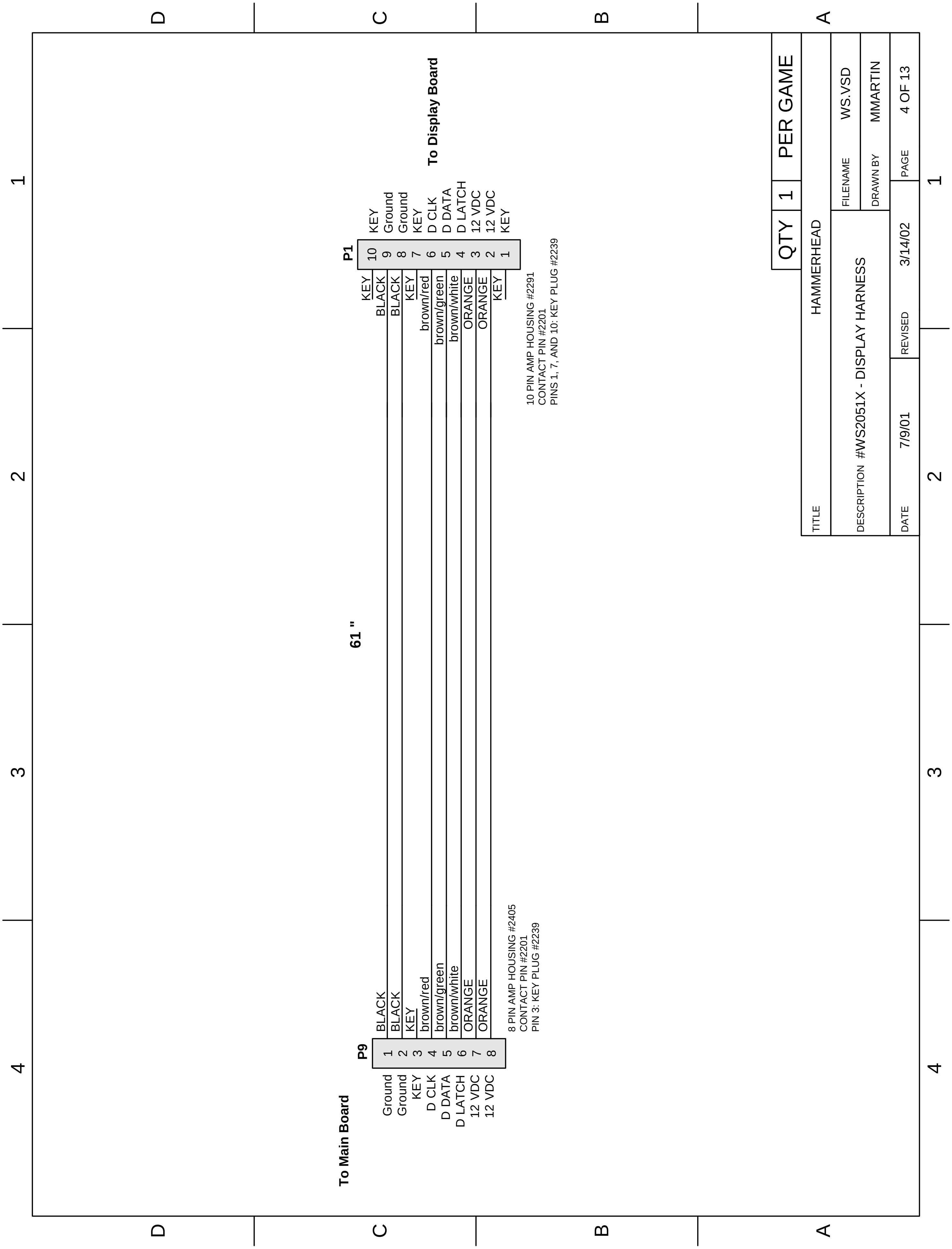
To Transformer
#PC20217
12 "
GREEN/YELLOW
To Marquee Harness
115 VAC
EARTH GROUND
115VAC
GRAY
GREEN/YELLOW
GRAY
15 "
3 PIN CAP #2288
PIN 2: FEMALE #2102
PINS 1 & 3: 20-14 AWG FEMALE #8259
To Main Board
16 VAC
12.4 VAC
16 VAC
22 VAC
22 VAC
12.4 VAC
ORANGE
YELLOW
ORANGE
RED
RED
YELLOW
12 "
6 PIN PLUG #2173
20-14 AWG MALE #8260
#WS2002X-
TRANSFORMER ASY
#WS2002
TRANSFORMER
(2-51-01107)
18 "
BLACK
WHITE
BLACK/WHITE
WHITE/BLACK
BROWN
BROWN/WHITE
.250 FLAG
#648
POWER MODULE BACK
#HH2050x - ASY POWER MODULE
3 MDQ
#WS2004PX - POWER MODULE GROUND
To Power Module
#639
.250
4 "
GREEN/YELLOW
#PC20217
14 "
GREEN/YELLOW
To Transformer
#PC20217
115 VAC @ 1.25A
18 AWG
22 VAC @ 6.0A
16 AWG
16 VAC @ 3.0A
18 AWG
12.4 VAC @ 4.0A
18 AWG
100 VAC 50/60~
18 AWG
100 VAC 50/60~
18 AWG
25 VAC 50/60~
18 AWG
TITLE
HAMMERHEAD
DESCRIPTION
#WS2002X - ASY TRANSFORMER
#WS2004PX - POWER MODULE
GROUND HARNESS
FILENAME
WS.VSD
DRAWN BY
MMARTIN
DATE
7/9/01
REVISED
3/14/02
PAGE
1 OF 13

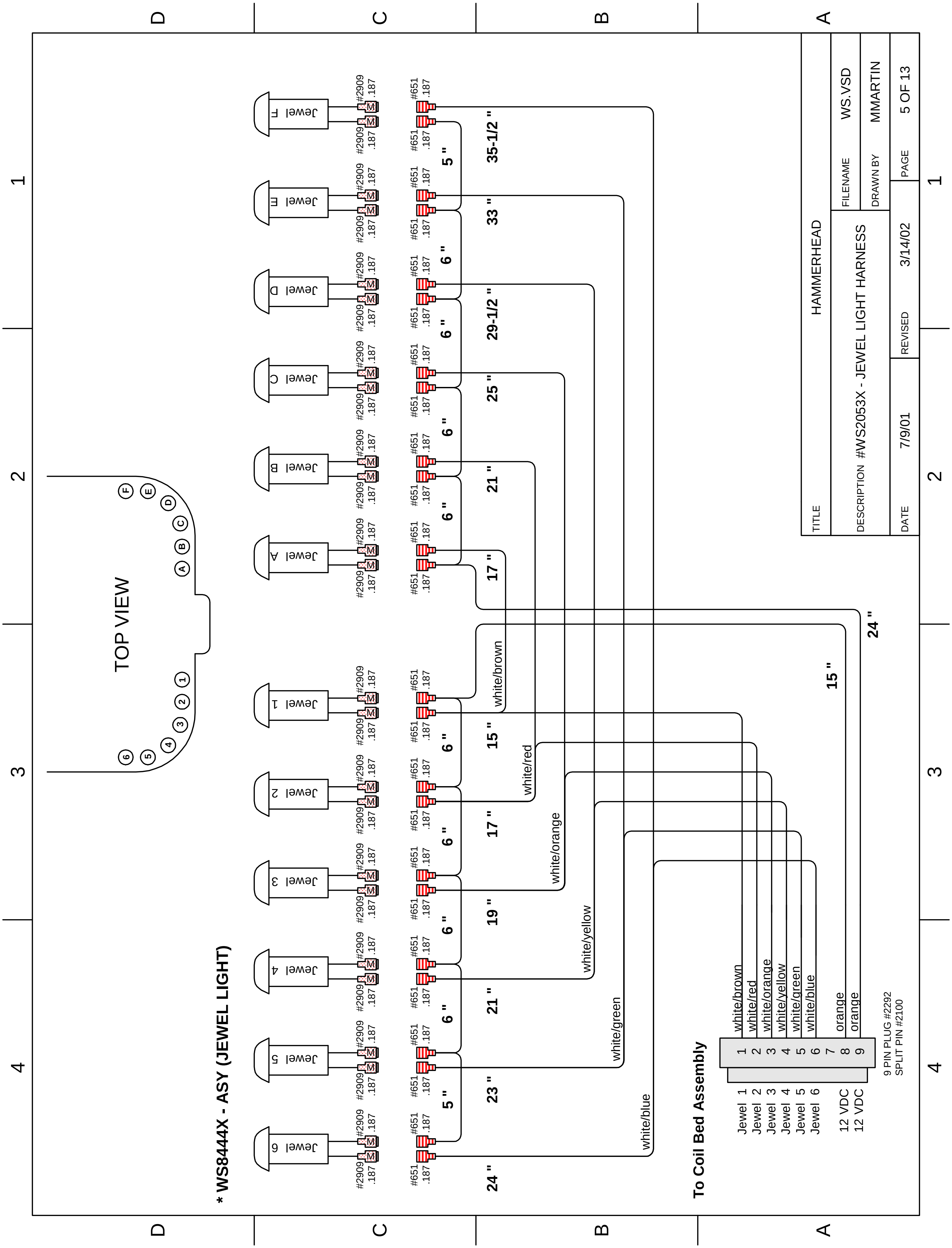


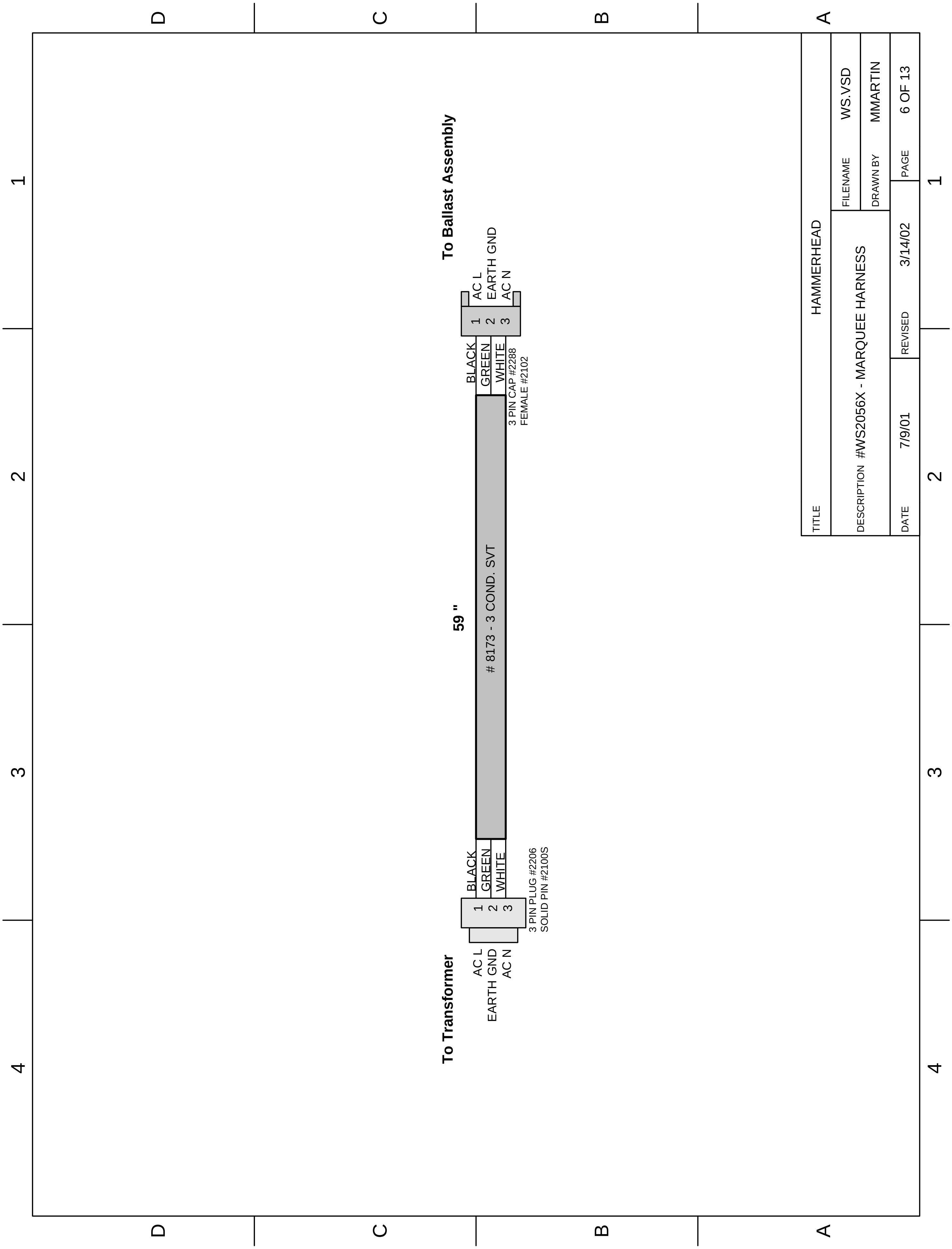
HAMMERHEAD
TITLE
FILENAME
WS.VSD
DRAWN BY
MMARTIN
PAGE
2 OF 13
DESCRIPTION
#WS2004X - CABINET GROUND
DATE
7/9/01
REVISED
3/14/02
#PC20217
3 "
#8068
29 "
GREEN/YELLOW
#8068
22 "
#8068
3 "
#8068
17 "
#PC20217

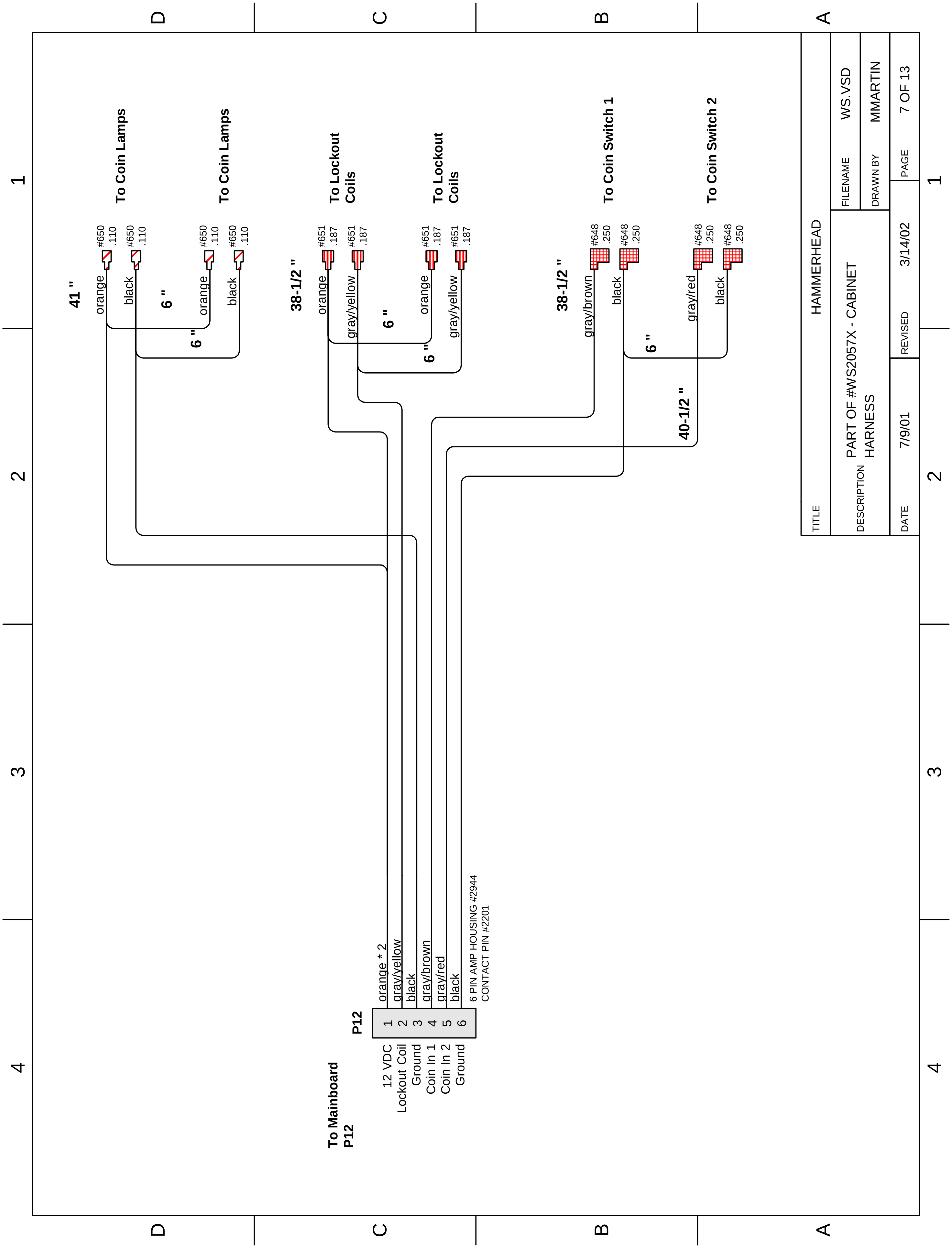


QTY	1	PER GAME	
TITLE	HAMMERHEAD		
DESCRIPTION	#WS2051AX - DISPLAY INTERCONNECT HARNESS	FILENAME	WS.VSD
		DRAWN BY	MMARTIN
DATE	7/9/01	REVISED	3/14/02
PAGE	3 OF 13		

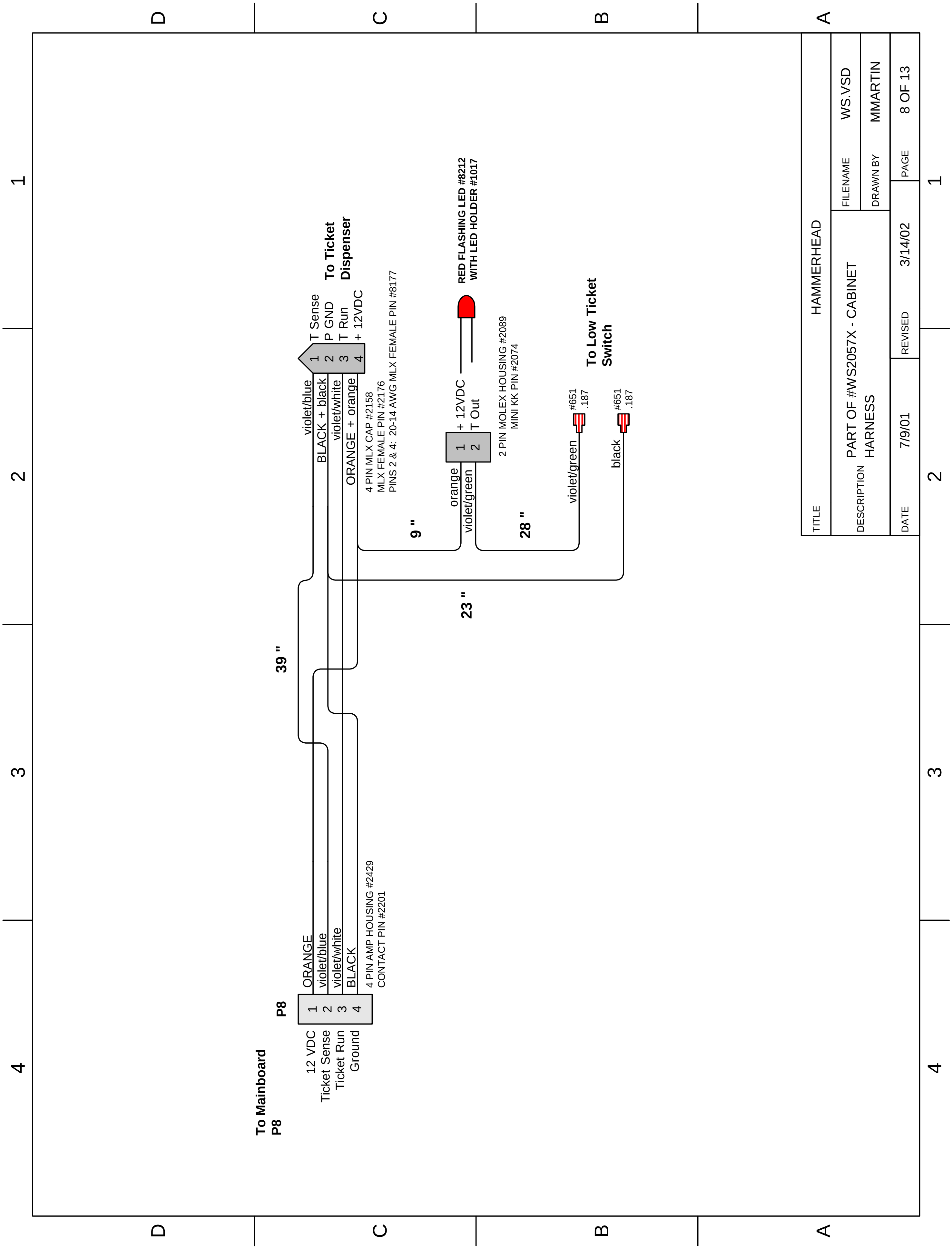

To Display Board
P1
10 KEY
9 Ground BLACK
8 Ground BLACK
7 KEY
6 D CLK brown/red
5 D DATA brown/green
4 D LATCH brown/white
3 12 VDC ORANGE
2 12 VDC ORANGE
1 KEY
10 PIN AMP HOUSING #2291
CONTACT PIN #2201
PINS 1, 7, AND 10: KEY PLUG #2239
61 "
To Main Board
P9
1 Ground BLACK
2 Ground BLACK
3 KEY
4 D CLK brown/red
5 D DATA brown/green
6 D LATCH brown/white
7 12 VDC ORANGE
8 12 VDC ORANGE
8 PIN AMP HOUSING #2405
CONTACT PIN #2201
PIN 3: KEY PLUG #2239
QTY 1 PER GAME
TITLE HAMMERHEAD
DESCRIPTION #WS2051X - DISPLAY HARNESS
FILENAME WS.VSD
DRAWN BY MMARTIN
DATE 7/9/01
REVISED 3/14/02
PAGE 4 OF 13
A B C D
1 2 3 4


TITLE HAMMERHEAD
DESCRIPTION #WS2053X - JEWEL LIGHT HARNESS
FILENAME WS.VSD
DRAWN BY MMARTIN
PAGE 5 OF 13
DATE 7/9/01
REVISED 3/14/02
TOP VIEW
* WS8444X - ASY (JEWEL LIGHT)
Jewel A
Jewel B
Jewel C
Jewel D
Jewel E
Jewel F
Jewel 1
Jewel 2
Jewel 3
Jewel 4
Jewel 5
Jewel 6
#2909 .187
#651 .187
white/brown
white/red
white/orange
white/yellow
white/green
white/blue
orange
To Coil Bed Assembly
Jewel 1
Jewel 2
Jewel 3
Jewel 4
Jewel 5
Jewel 6
12 VDC
12 VDC
9 PIN PLUG #2292
SPLIT PIN #2100
35-1/2 "
33 "
29-1/2 "
25 "
21 "
17 "
24 "
15 "
19 "
23 "
5 "
6 "

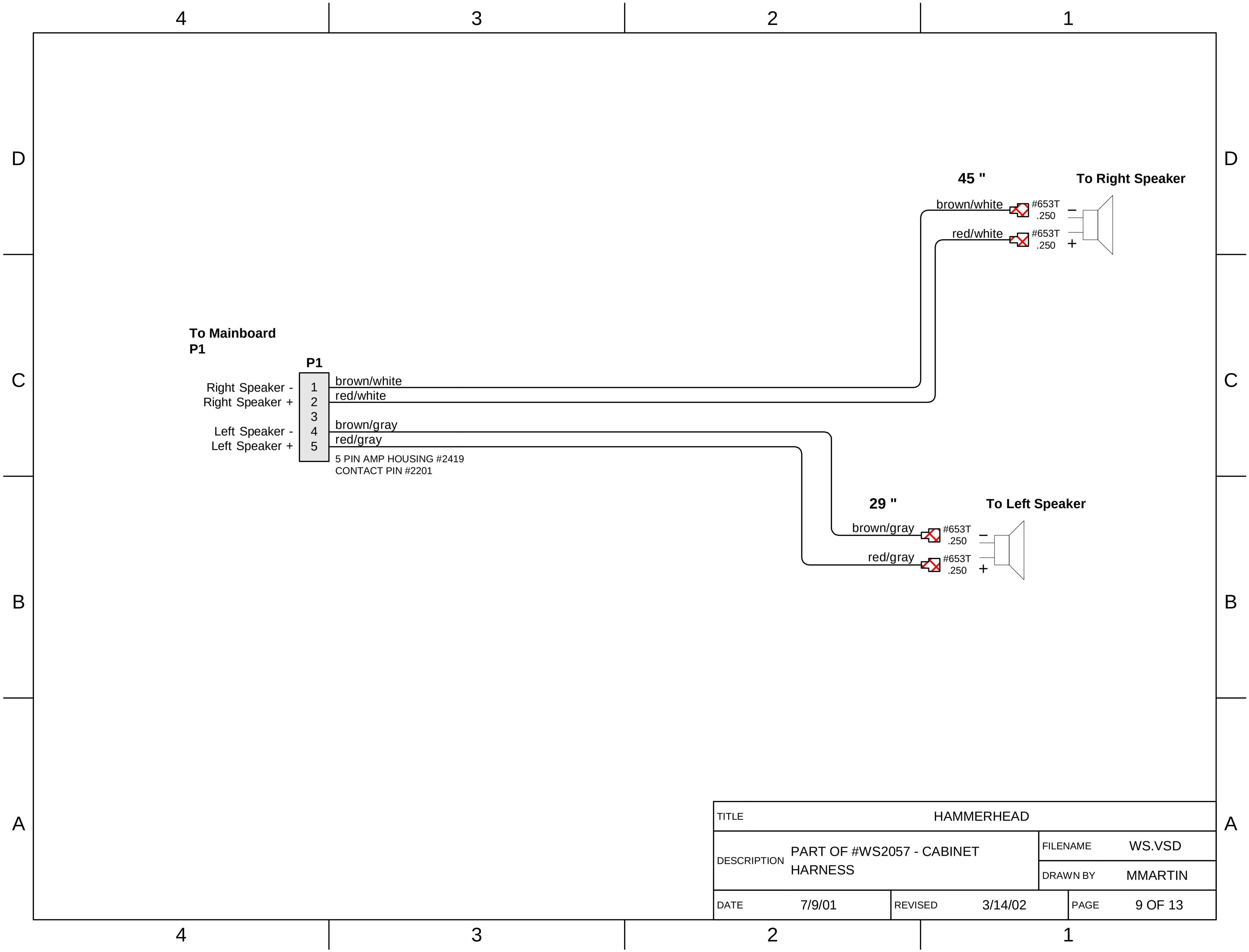

To Ballast Assembly
AC L
EARTH GND
AC N
1 2 3
BLACK
GREEN
WHITE
3 PIN CAP #2288
FEMALE #2102
59 "
8173 - 3 COND. SVT
BLACK
GREEN
WHITE
1 2 3
3 PIN PLUG #2206
SOLID PIN #2100S
AC L
EARTH GND
AC N
To Transformer
TITLE
HAMMERHEAD
DESCRIPTION
#WS2056X - MARQUEE HARNESS
FILENAME
WS.VSD
DRAWN BY
MMARTIN
DATE
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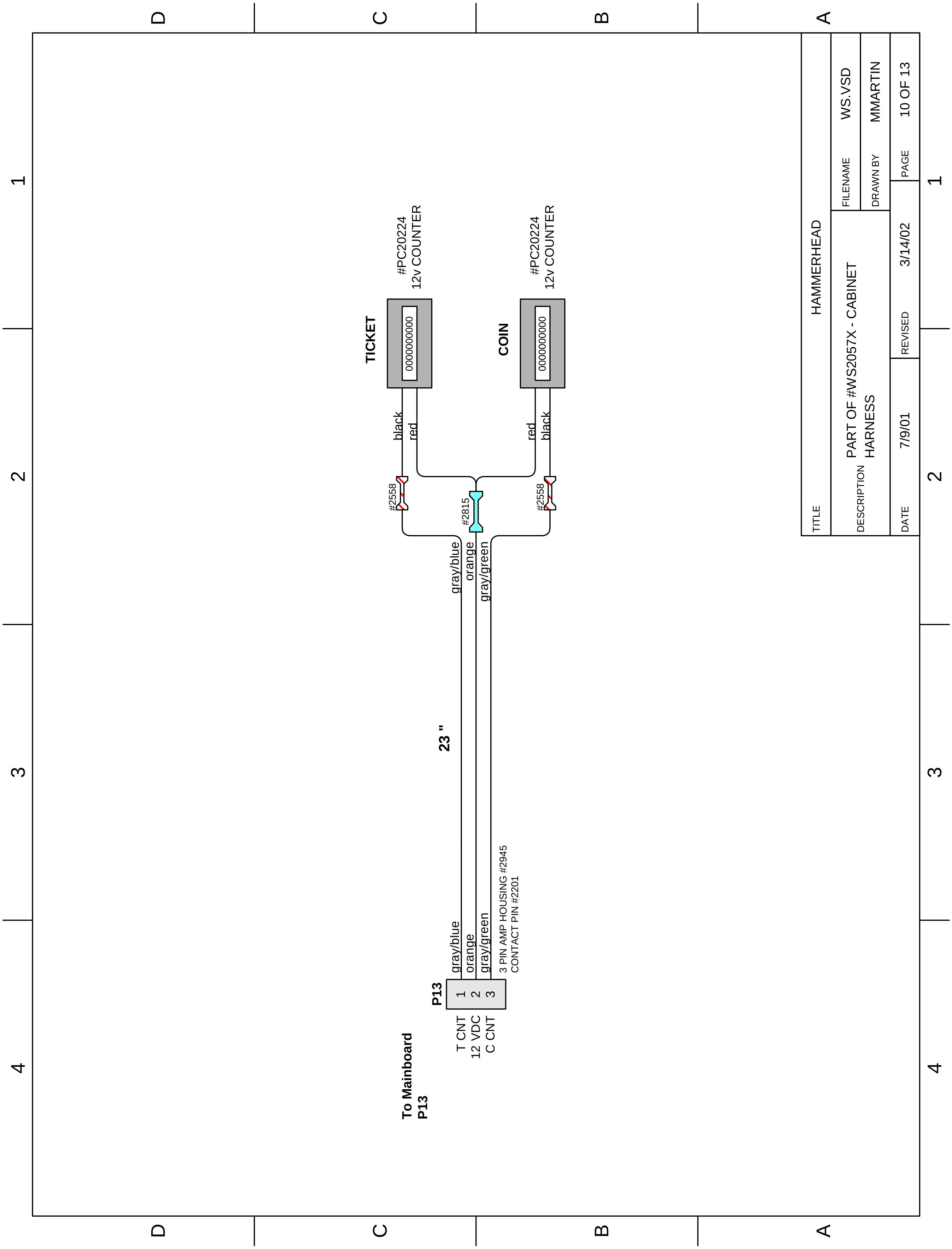


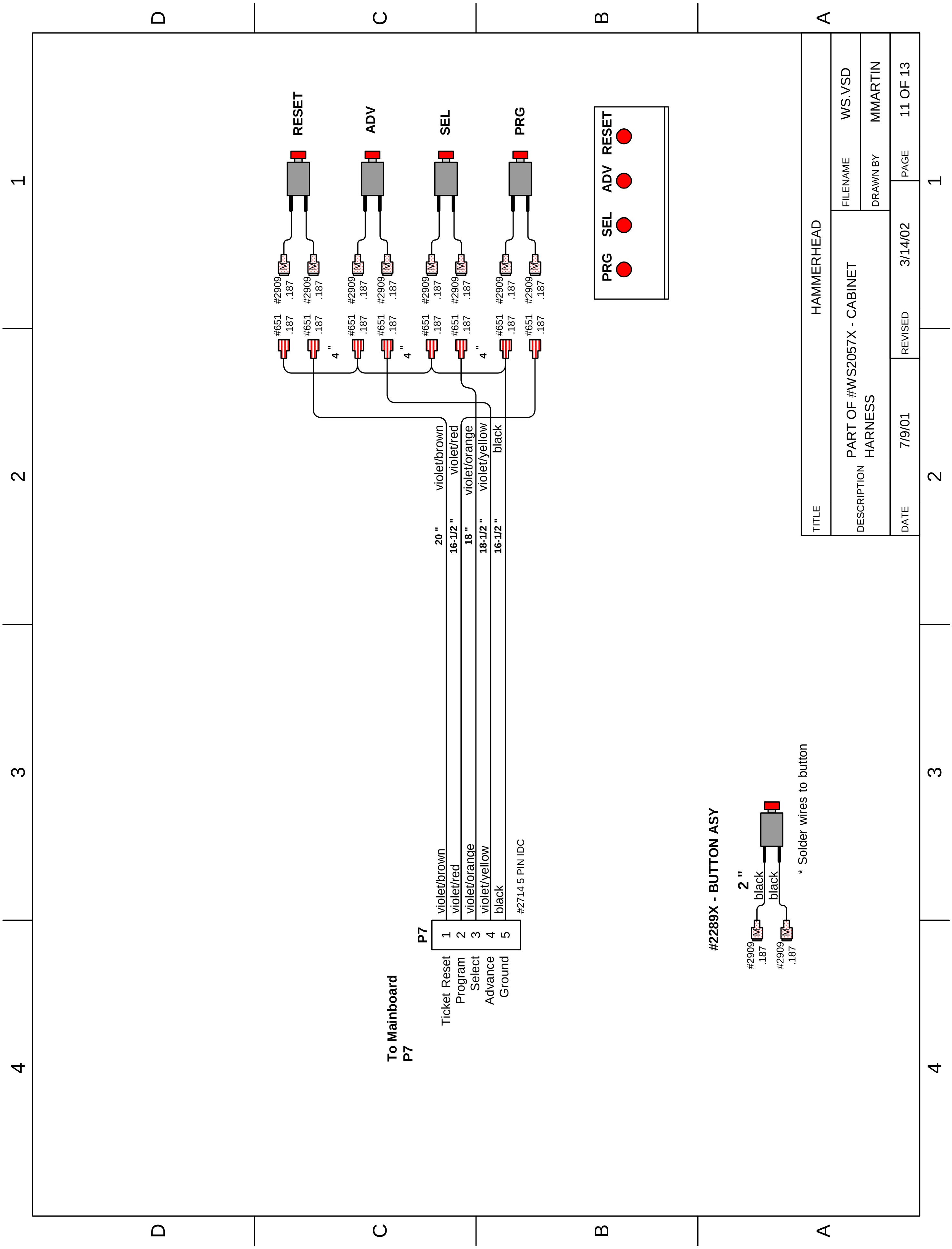
To Coin Lamps
To Coin Lamps
To Lockout Coils
To Lockout Coils
To Coin Switch 1
To Coin Switch 2
#650 .110
#651 .187
#648 .250
41 "
6 "
38-1/2 "
40-1/2 "
orange
black
gray/yellow
gray/brown
gray/red
P12
To Mainboard P12
1 12 VDC orange * 2
2 Lockout Coil gray/yellow
3 Ground black
4 Coin In 1 gray/brown
5 Coin In 2 gray/red
6 Ground black
6 PIN AMP HOUSING #2944
CONTACT PIN #2201
TITLE HAMMERHEAD
FILENAME WS.VSD
DESCRIPTION PART OF #WS2057X - CABINET HARNESS
DRAWN BY MMARTIN
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To Mainboard P8
P8
12 VDC
Ticket Sense
Ticket Run
Ground
ORANGE
violet/blue
violet/white
BLACK
4 PIN AMP HOUSING #2429
CONTACT PIN #2201
39 "
23 "
9 "
28 "
To Ticket Dispenser
T Sense
P GND
T Run
+ 12VDC
violet/blue
BLACK + black
violet/white
ORANGE + orange
4 PIN MLX CAP #2158
MLX FEMALE PIN #2176
PINS 2 & 4: 20-14 AWG MLX FEMALE PIN #8177
RED FLASHING LED #8212
WITH LED HOLDER #1017
+ 12VDC
T Out
orange
violet/green
2 PIN MOLEX HOUSING #2089
MINI KK PIN #2074
To Low Ticket Switch
violet/green
black
#651
.187
TITLE
HAMMERHEAD
DESCRIPTION
PART OF #WS2057X - CABINET HARNESS
FILENAME
WS.VSD
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To Mainboard
P1
P1
Right Speaker -
Right Speaker +
Left Speaker -
Left Speaker +
1
2
3
4
5
brown/white
red/white
brown/gray
red/gray
5 PIN AMP HOUSING #2419
CONTACT PIN #2201
45 "
To Right Speaker
brown/white
red/white
#653T
.250
#653T
.250
29 "
To Left Speaker
brown/gray
red/gray
#653T
.250
#653T
.250
TITLE
HAMMERHEAD
DESCRIPTION
PART OF #WS2057 - CABINET
HARNESS
FILENAME
WS.VSD
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TICKET
#PC20224
12v COUNTER
0000000000
COIN
#PC20224
12v COUNTER
0000000000
black
red
red
black
#2558
#2815
#2558
gray/blue
orange
gray/green
23 "
gray/blue
orange
gray/green
3 PIN AMP HOUSING #2945
CONTACT PIN #2201
P13
1 2 3
T CNT
12 VDC
C CNT
To Mainboard
P13
TITLE
HAMMERHEAD
DESCRIPTION
PART OF #WS2057X - CABINET
HARNESS
FILENAME
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RESET
ADV
SEL
PRG
#2909 .187
#651 .187
4 "
PRG SEL ADV RESET
violet/brown
violet/red
violet/orange
violet/yellow
black
20 "
16-1/2 "
18 "
18-1/2 "
16-1/2 "
To Mainboard P7
P7
Ticket Reset 1
Program 2
Select 3
Advance 4
Ground 5
#2714 5 PIN IDC
#2289X - BUTTON ASY
2 "
black
black
* Solder wires to button
TITLE HAMMERHEAD
DESCRIPTION PART OF #WS2057X - CABINET HARNESS
FILENAME WS.VSD
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P2 — 44 "

Function	Pin	Wire	To
Shark 2	1	TAN/BLACK	62
Shark 1	2	RED/BLACK	58
Shark 4	3	ORANGE/BLACK	51
Shark 3	4	YELLOW/BLACK	43
Shark 5	5	GREEN/BLACK	26
Shark 6	6	BLUE/BLACK	18

6 PIN AMP HOUSING #2944
CONTACT PIN #2201

P3 — 42 "

Function	Pin	Wire	To
30 VDC	1	BROWN	63
30 VDC	2	RED	59
30 VDC	3	ORANGE	52
30 VDC	4	YELLOW	44
30 VDC	5	GREEN	27
30 VDC	6	BLUE	19
30 VDC	7		
30 VDC	8		
30 VDC	9		

9 PIN AMP HOUSING #8136
CONTACT PIN #2201

P4 — 65 "

Function	Pin	Wire	To
Ground	1	black	41
Ground	2	black	24
Ground	3	black	3
Ground	4		
Ground	5		

5 PIN AMP HOUSING #2419
CONTACT PIN #2201

P5 — 57 "

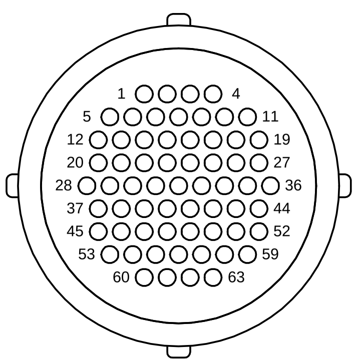
Function	Pin	Wire	To
	1		
	2		
OPTO SENSE 6	3	yellow/blue	17
KEY	4	KEY	
OPTO SENSE 5	5	yellow/green	25
OPTO SENSE 4	6	yellow/white	42
OPTO SENSE 3	7	yellow/orange	50
OPTO SENSE 2	8	yellow/red	57
OPTO SENSE 1	9	yellow/brown	56

9 PIN AMP HOUSING #8136
CONTACT PIN #2201
PIN 4: KEY PLUG #2239

P6 — 45 "

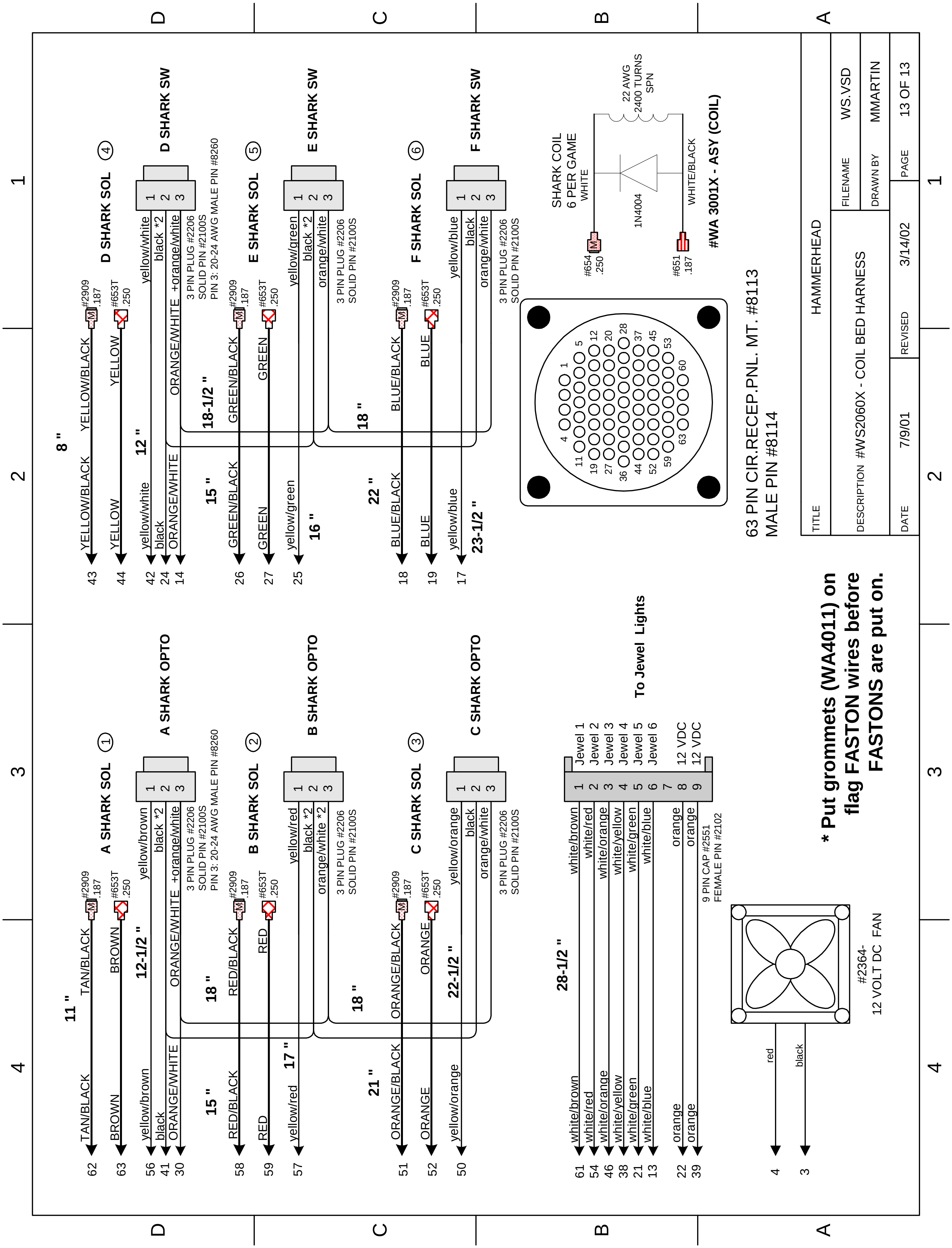
Function	Pin	Wire	To
12 VDC	1	ORANGE/WHITE	30
12 VDC	2	ORANGE/WHITE	14
Jewel 1	3	white/brown	61
Jewel 2	4	white/red	54
Jewel 3	5	white/orange	46
Jewel 4	6	white/yellow	38
Jewel 5	7	white/green	21
Jewel 6	8	white/blue	13
	9		
12 VDC	10	orange	22
12 VDC	11	orange	39
12VDC	12	orange	4

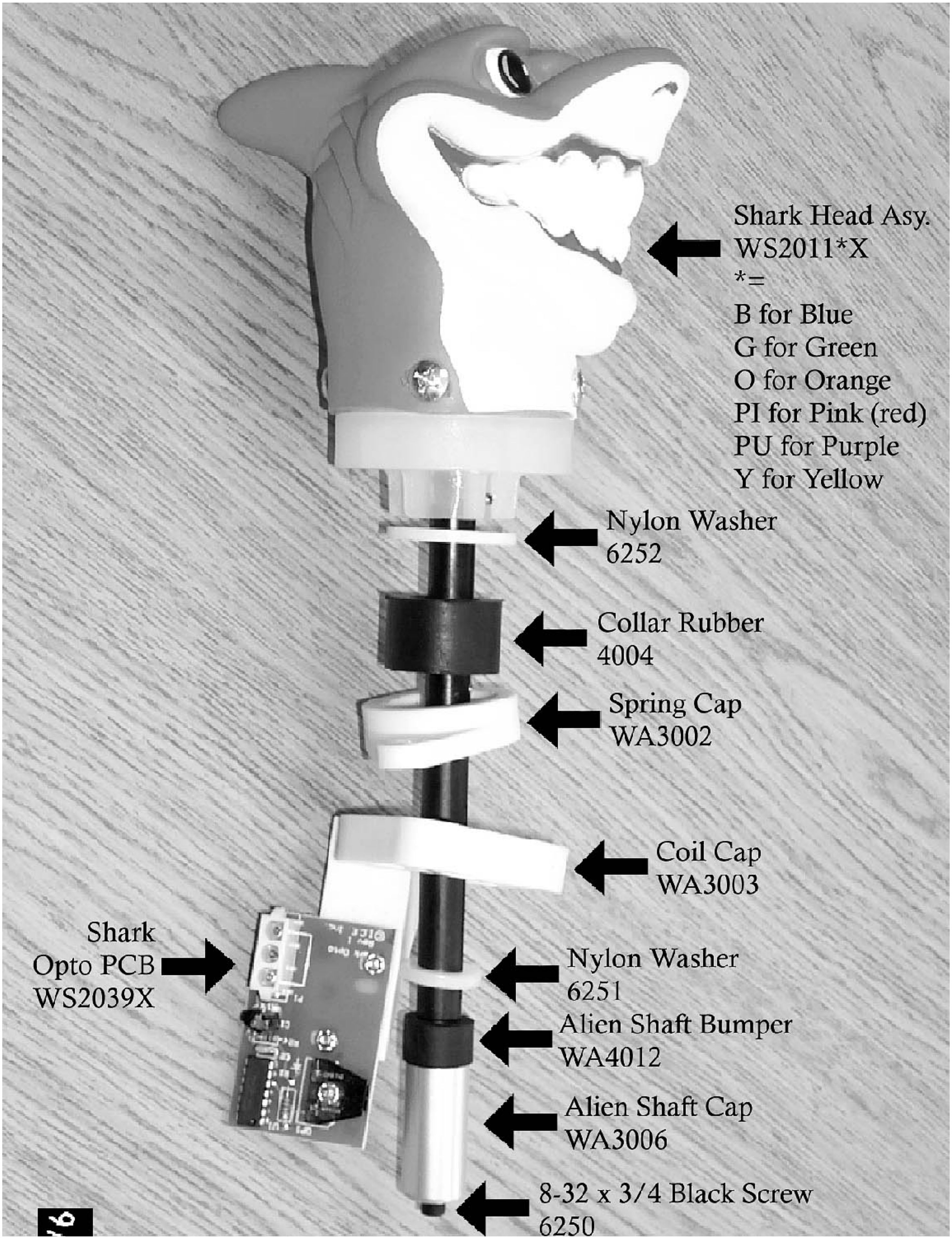
12 PIN AMP HOUSING #8428
CONTACT PIN #2201



63 PIN CIRCULAR PLUG #8111
FEMALE PIN #8112
CLAMP #8110

TITLE	HAMMERHEAD		
DESCRIPTION	#WS2059X - MAIN TO COIL BED HARNESS	FILENAME	WS.VSD
		DRAWN BY	MMARTIN
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HAMMERHEAD
DESCRIPTION #WS2060X - COIL BED HARNESS
FILENAME WS.VSD
DRAWN BY MMARTIN
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DATE 7/9/01
REVISED 3/14/02
D SHARK SOL
E SHARK SOL
F SHARK SOL
A SHARK SOL
B SHARK SOL
C SHARK SOL
D SHARK SW
E SHARK SW
F SHARK SW
A SHARK OPTO
B SHARK OPTO
C SHARK OPTO
3 PIN PLUG #2206
SOLID PIN #2100S
PIN 3: 20-24 AWG MALE PIN #8260
SHARK COIL
6 PER GAME
22 AWG
2400 TURNS
SPN
1N4004
#WA 3001X - ASY (COIL)
63 PIN CIR.RECEP.PNL. MT. #8113
MALE PIN #8114
To Jewel Lights
9 PIN CAP #2551
FEMALE PIN #2102
#2364-
12 VOLT DC FAN
* Put grommets (WA4011) on flag FASTON wires before FASTONS are put on.


Shark Head Asy.
WS2011*X
*=
B for Blue
G for Green
O for Orange
PI for Pink (red)
PU for Purple
Y for Yellow
Nylon Washer
6252
Collar Rubber
4004
Spring Cap
WA3002
Coil Cap
WA3003
Shark
Opto PCB
WS2039X
Nylon Washer
6251
Alien Shaft Bumper
WA4012
Alien Shaft Cap
WA3006
8-32 x 3/4 Black Screw
6250

WARRANTY POLICY

I.C.E. Inc warrants all components in new machines to be free of defects in materials and workmanship for the period listed below:

- 180 days on Main PCB's, Computers & Motors
- 1 year on all LCD monitor panels
- 90 days on all other electronic and mechanical components
- 30 days on all I.C.E. repairs and parts purchases

I.C.E. Inc shall not be obligated to furnish a warranty request under the following conditions:

- Equipment or parts have failed through normal wear and tear
- Equipment has been subjected to unwarranted stress, abuse or neglect
- Equipment has been damaged as a result of arbitrary repair/modification

Products will only be covered under warranty by obtaining an I.C.E. authorized RMA #. To obtain an RMA # please provide I.C.E. tech support with the game serial # or original I.C.E. invoice # and a detailed description of the failure or fault symptoms.

I.C.E. Inc will assume no liability whatsoever for costs associated with labor or travel time to replace defective parts. All defective warranty covered components will be replaced with new or factory refurbished components equal to OEM specifications.

I.C.E. Inc will cover domestic UPS ground, or comparable shipping costs during the warranty period. International or expedited shipments are available for an additional charge. To obtain credit defective parts must be returned to I.C.E. Inc, at the customer's expense, within 30 days. After 30 days a 15% re-stocking fee will apply to all returns.

ICE distributors are independent, privately owned and operated. In their judgment, they may sell parts and/or accessories other than those manufactured by I.C.E. Inc. We cannot be responsible for the quality, suitability or safety of any non-I.C.E. part or modification (including labor) that is performed by such a distributor.

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